

FIG. 1

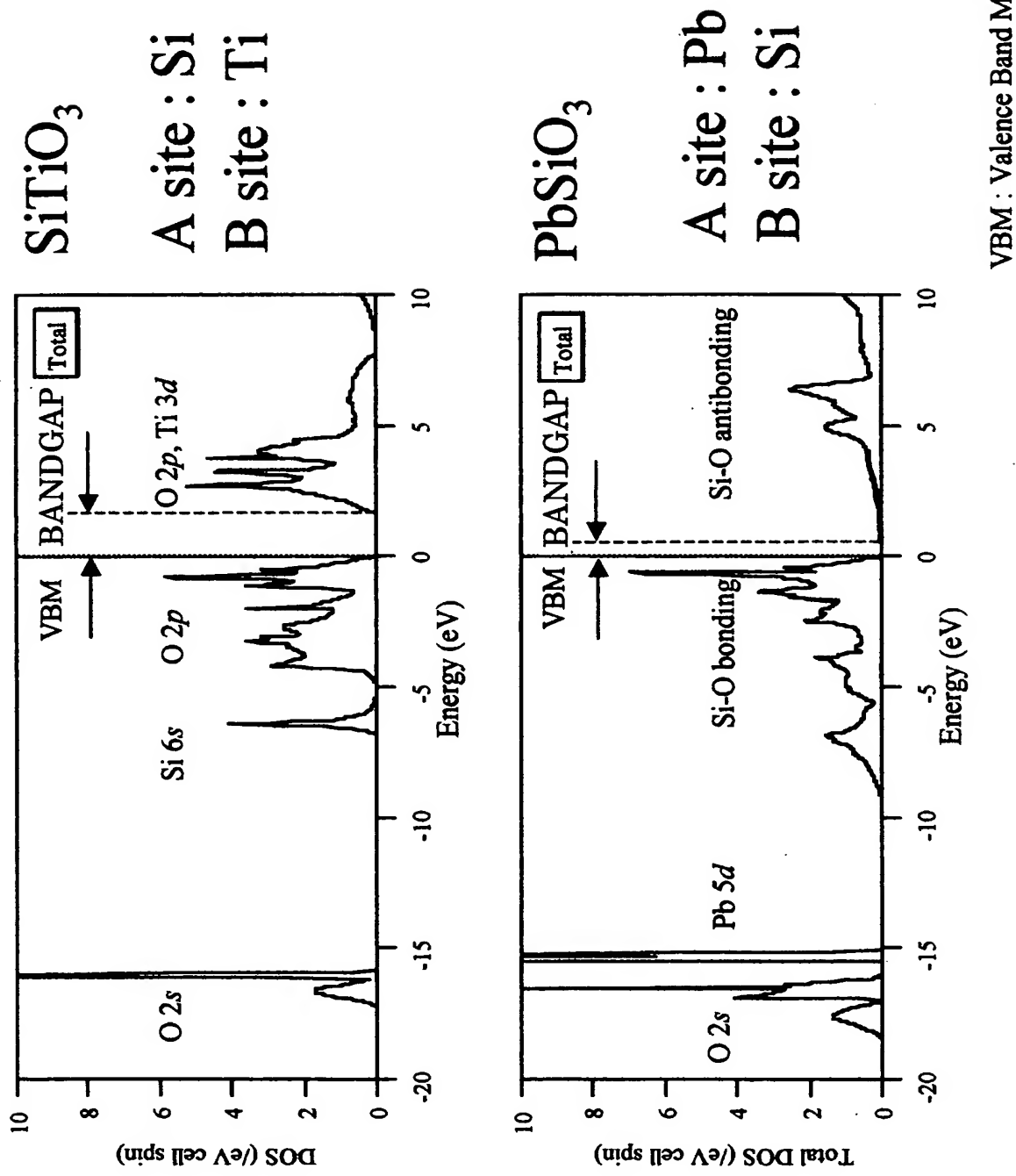


FIG. 2

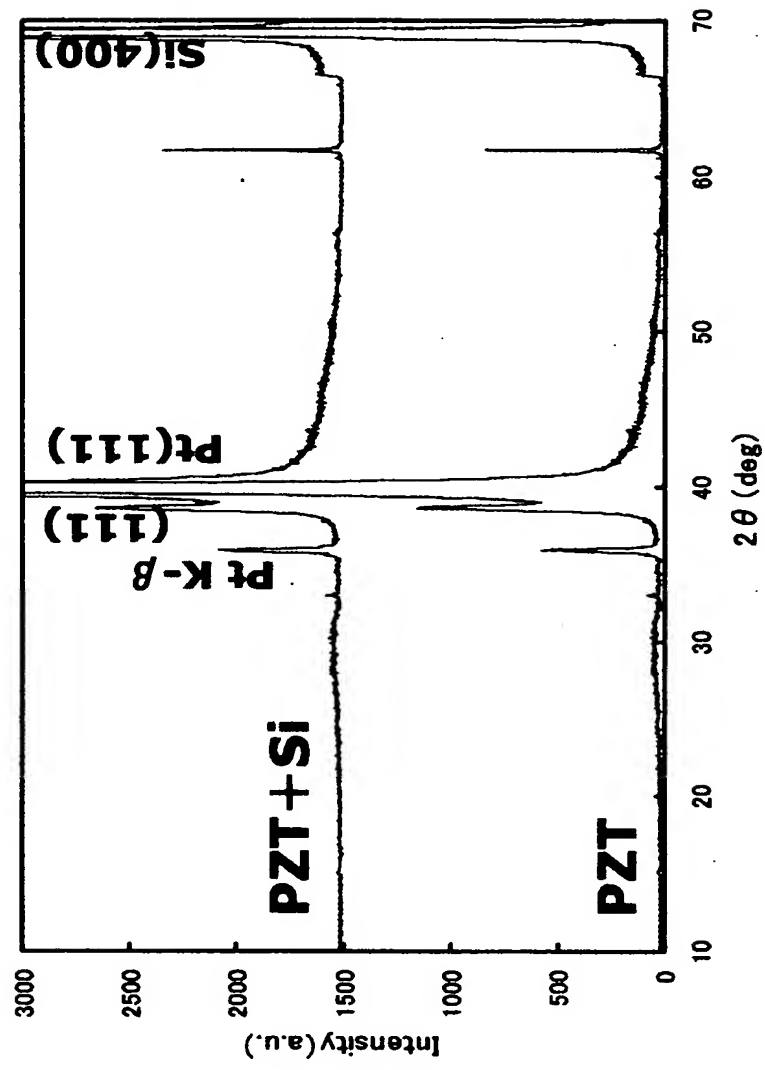
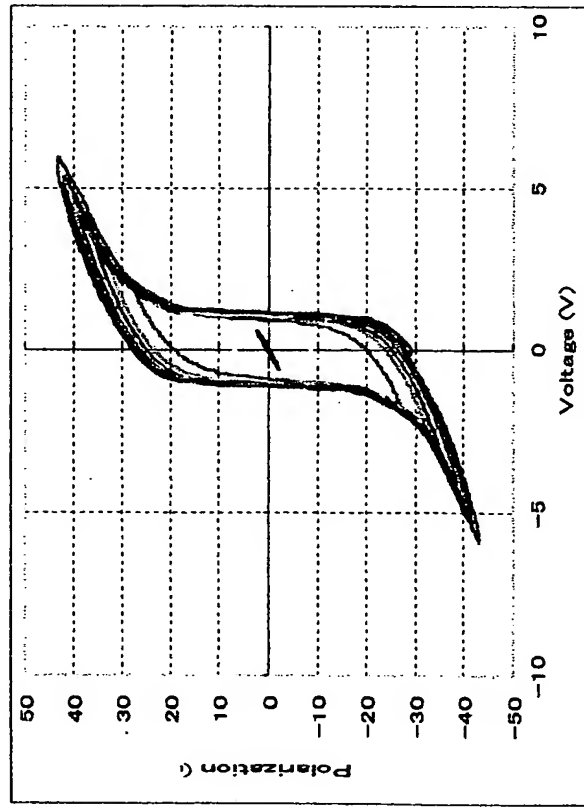


FIG. 3

PZT



PZT+Si

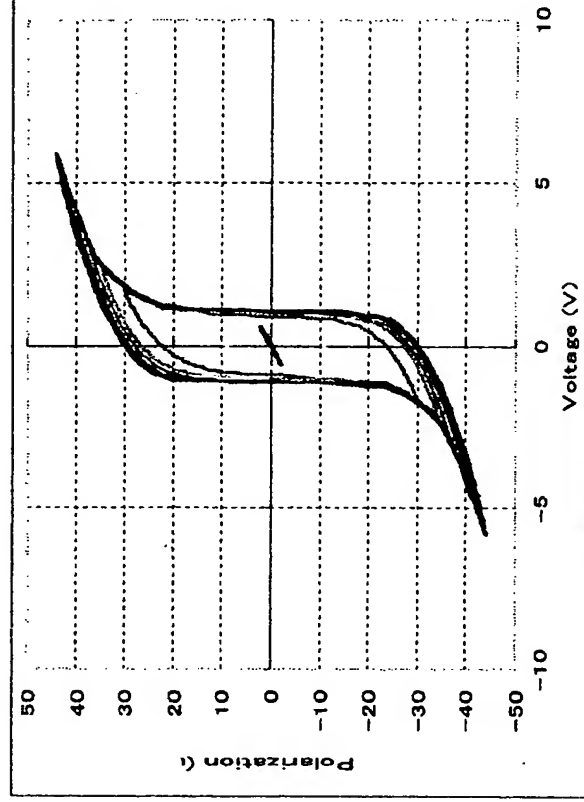


FIG. 4A

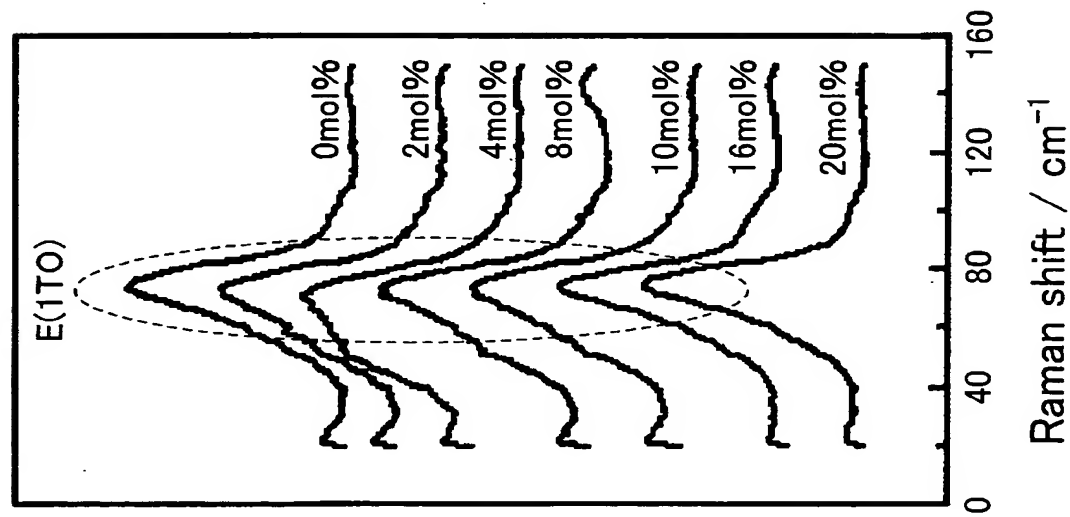
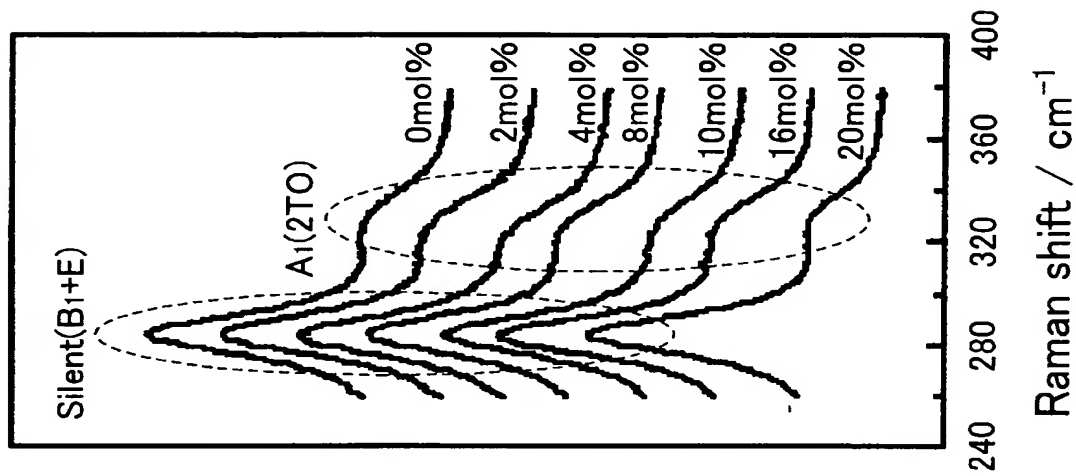


FIG. 4B



**FIG. 5**

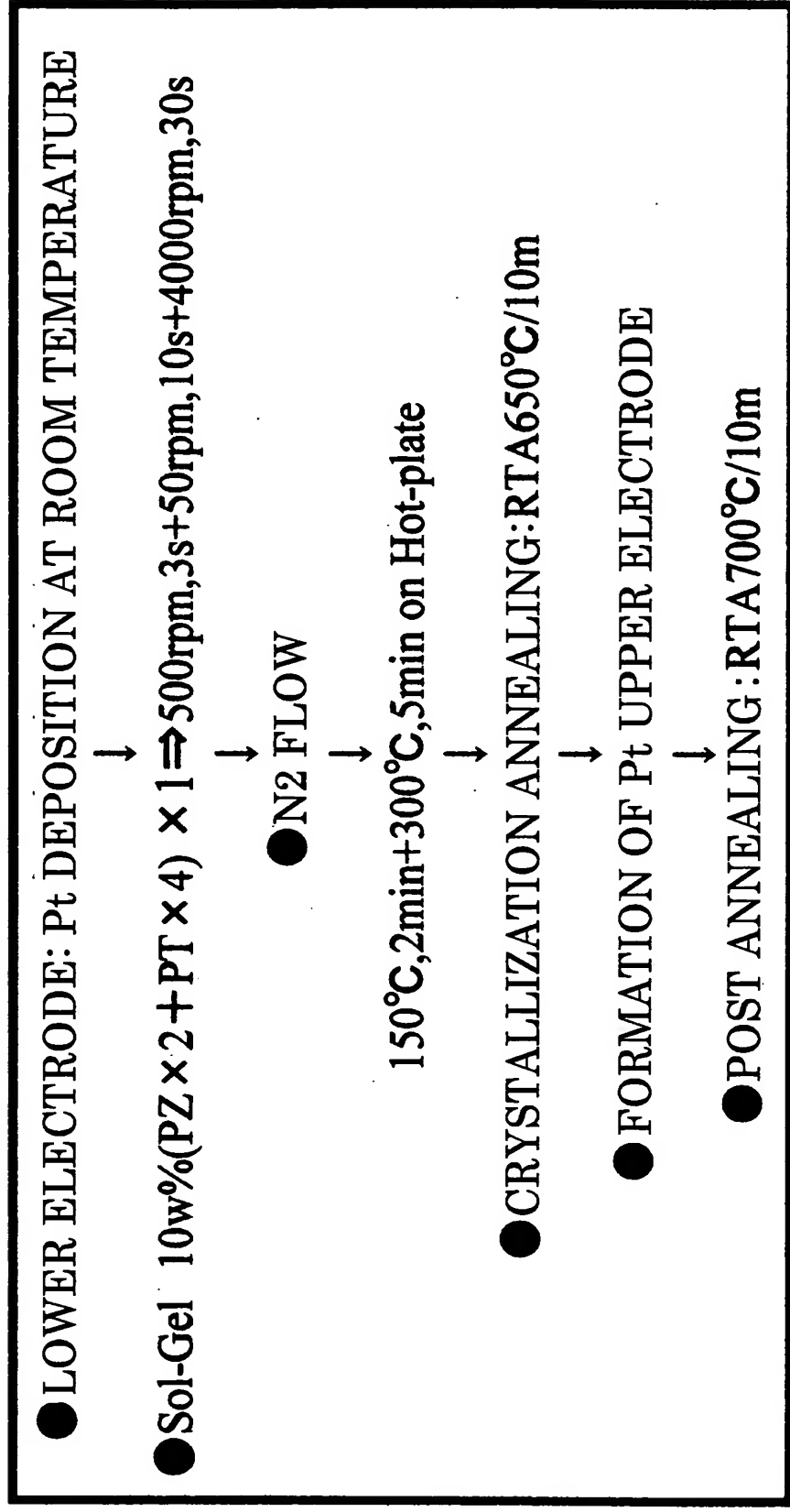
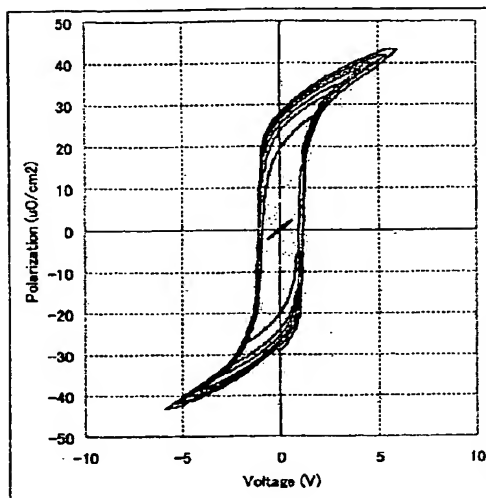
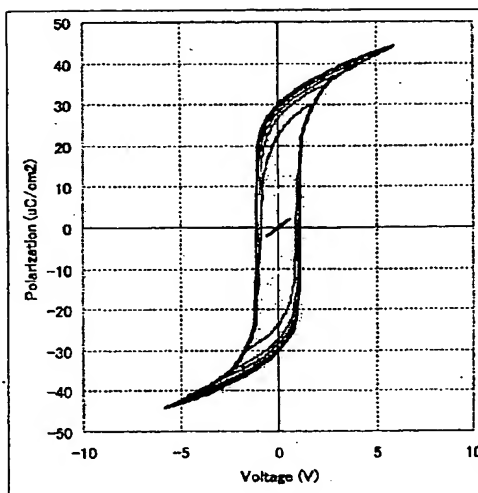


FIG. 6

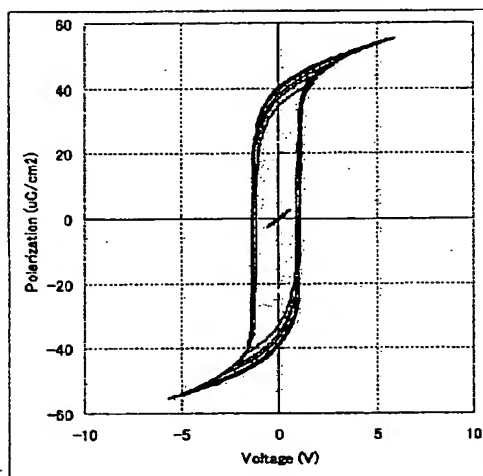
Nb=0 [mol%]



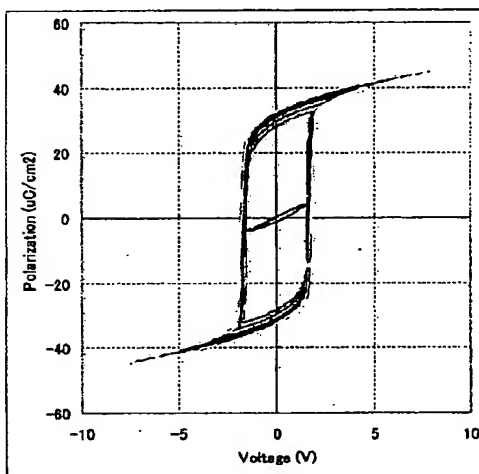
5



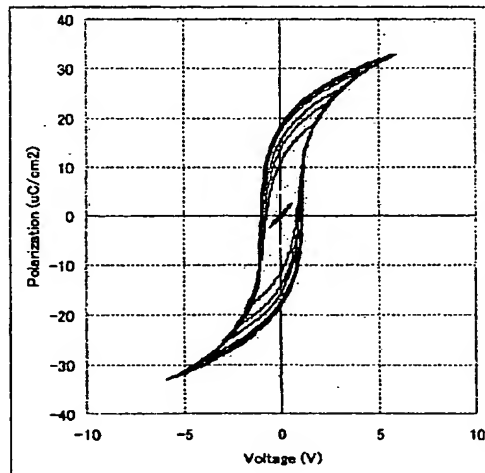
Nb=10 [mol%]



20



Nb=30 [mol%]



40

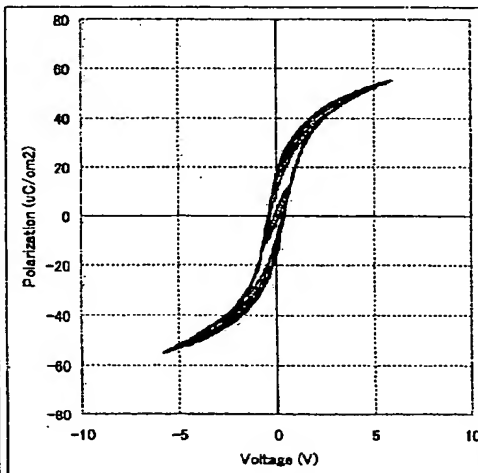


FIG. 7

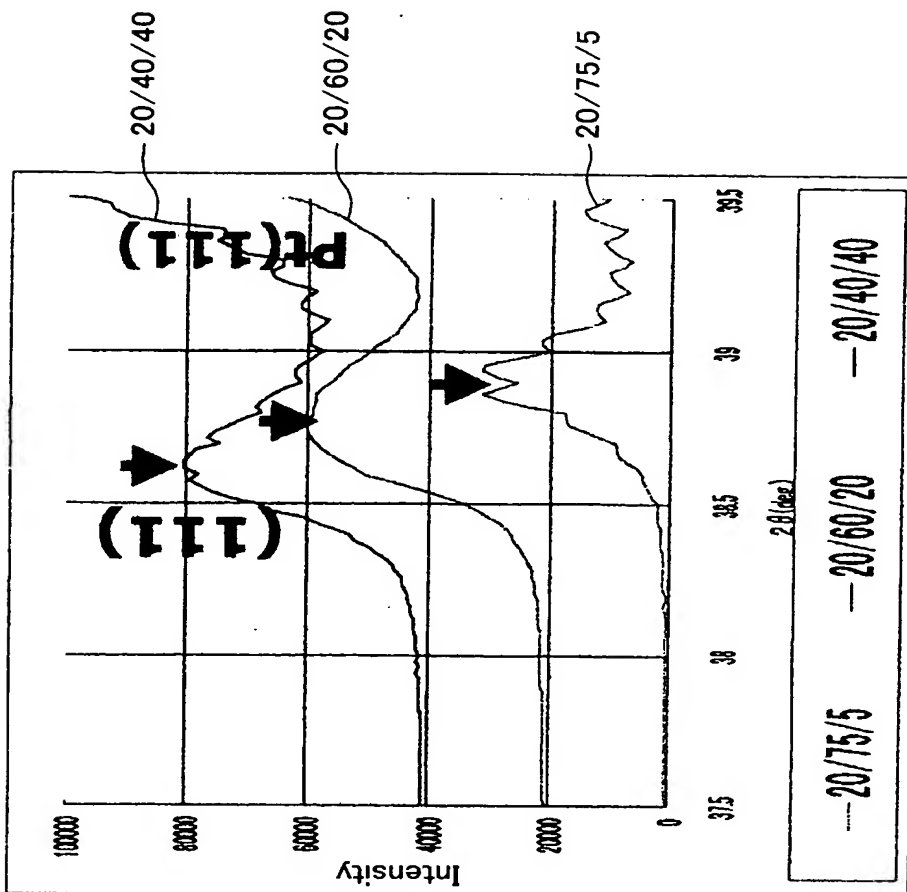
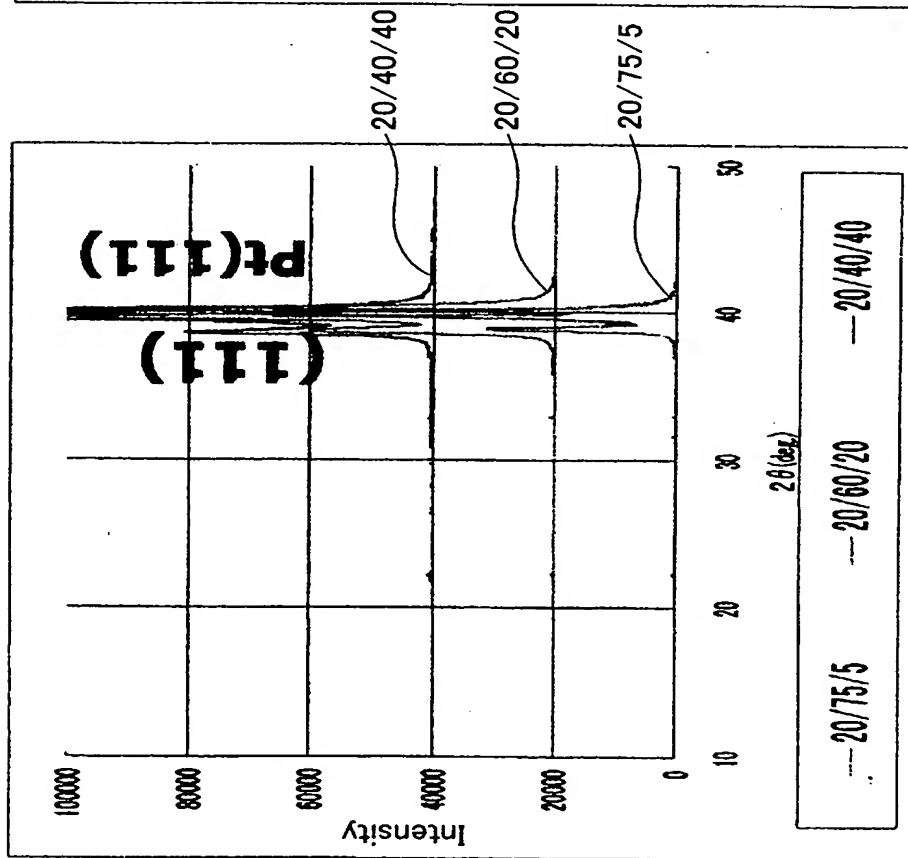


FIG. 8

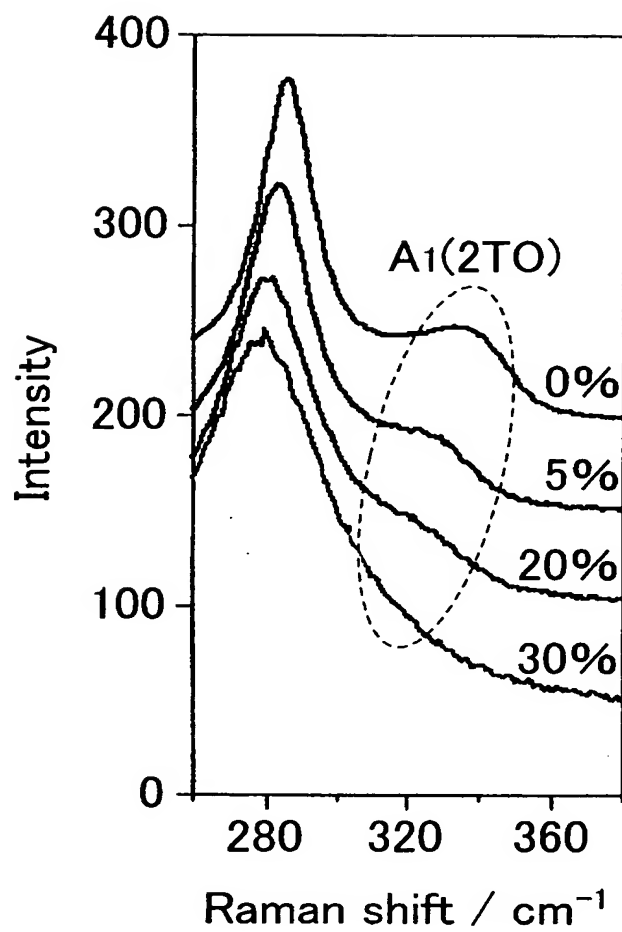


FIG. 9

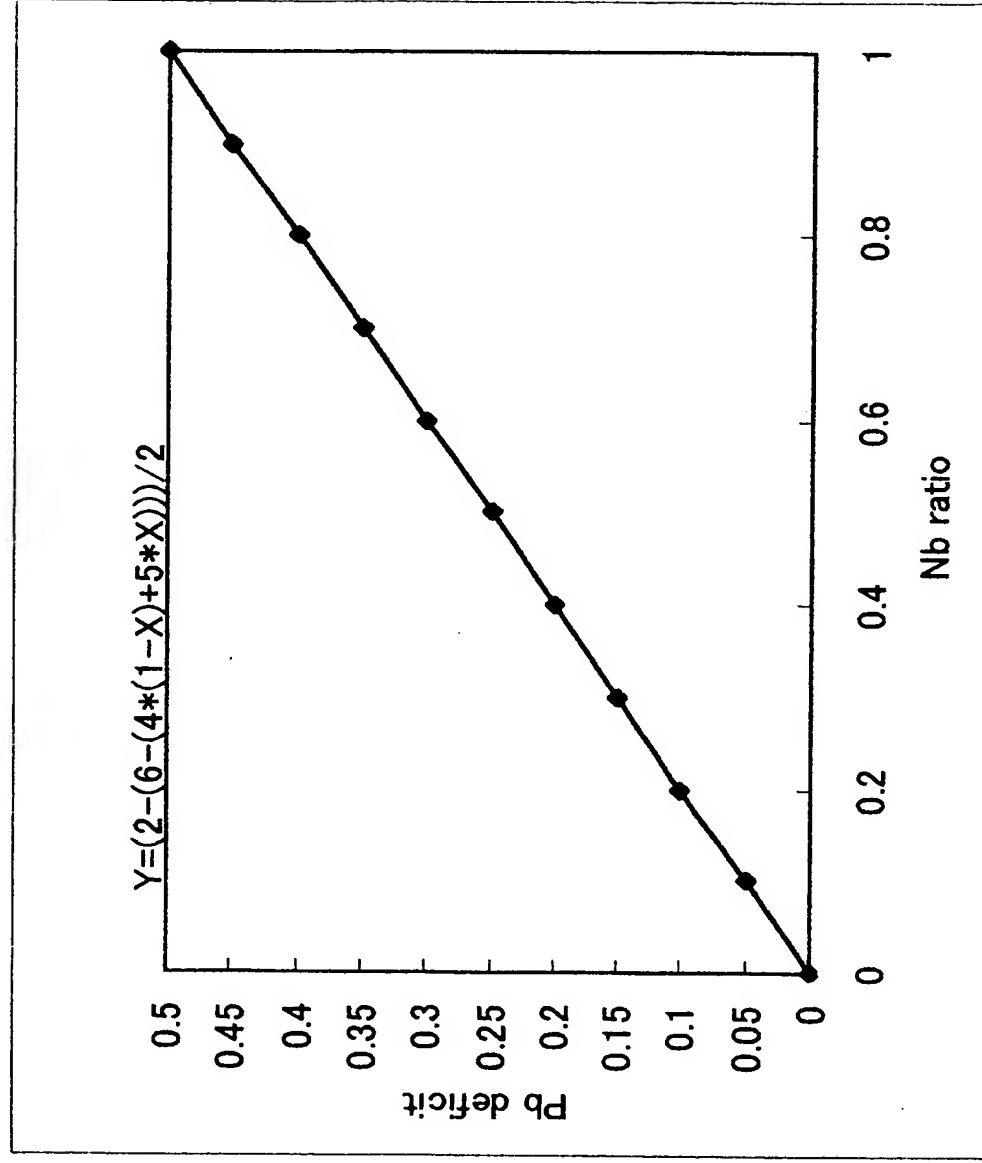


FIG. 10

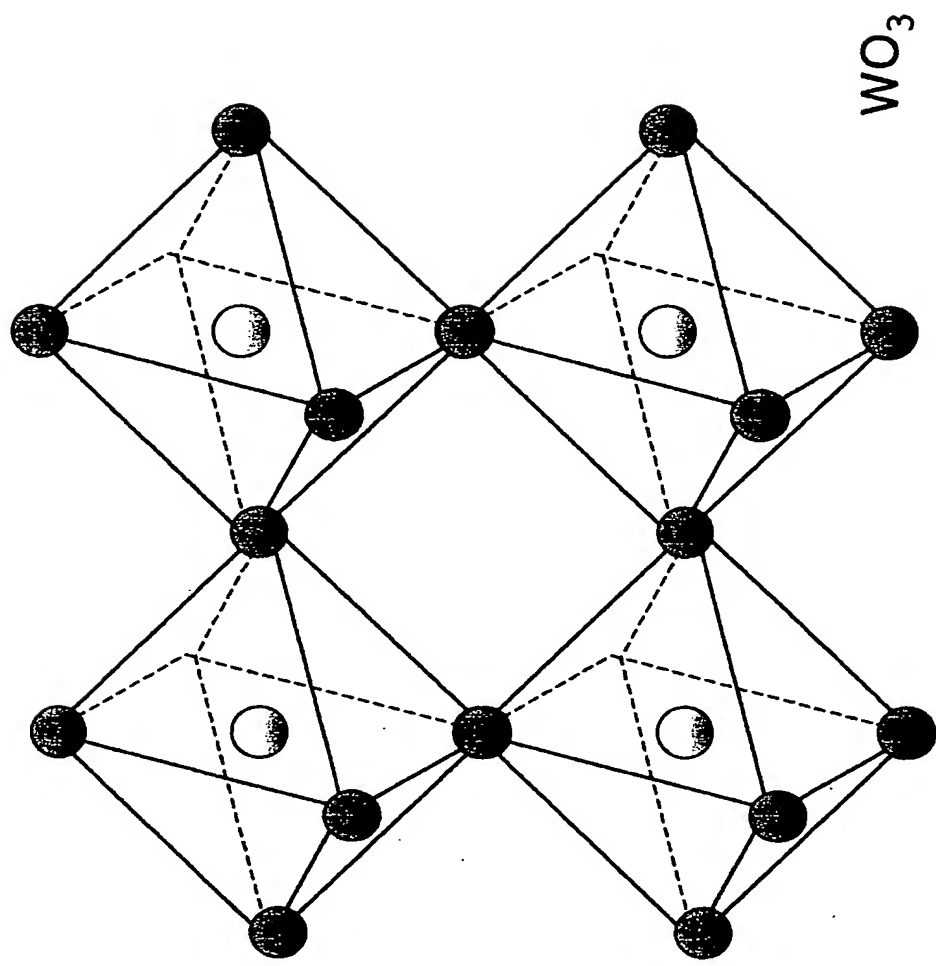


FIG. 11

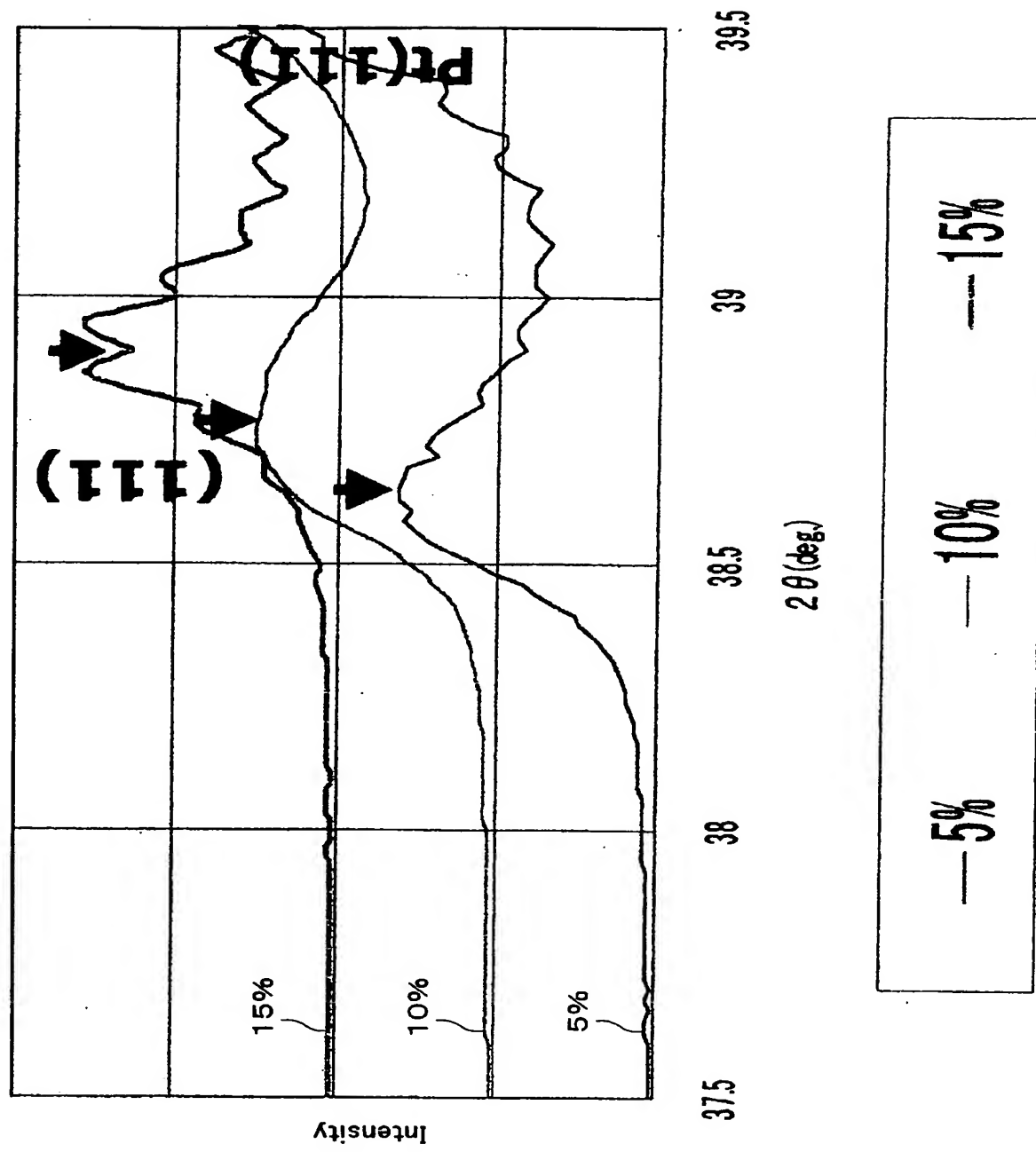


FIG. 12

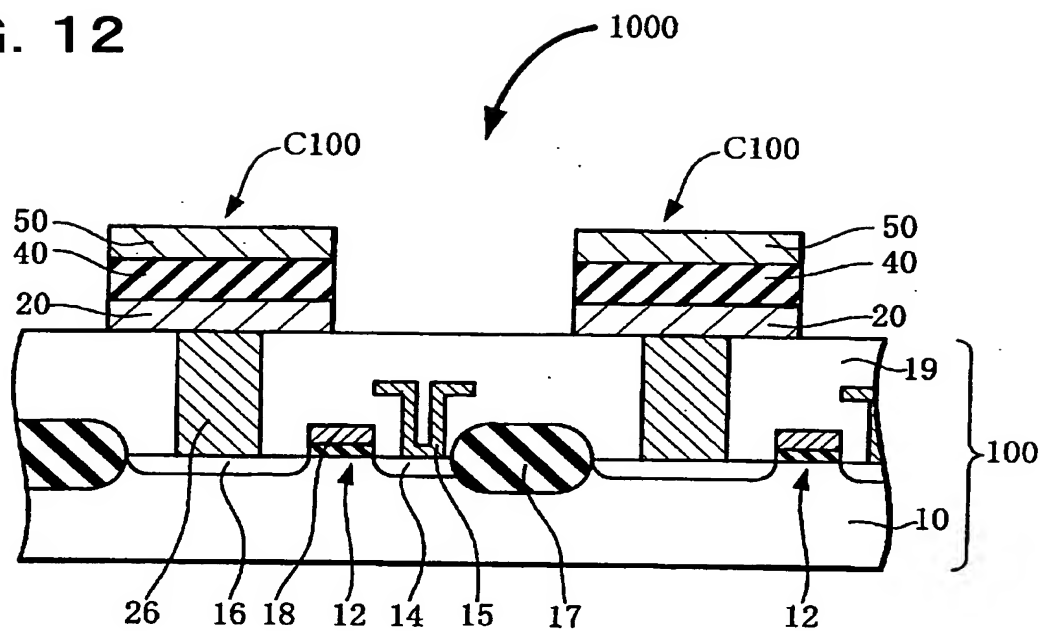


FIG. 13

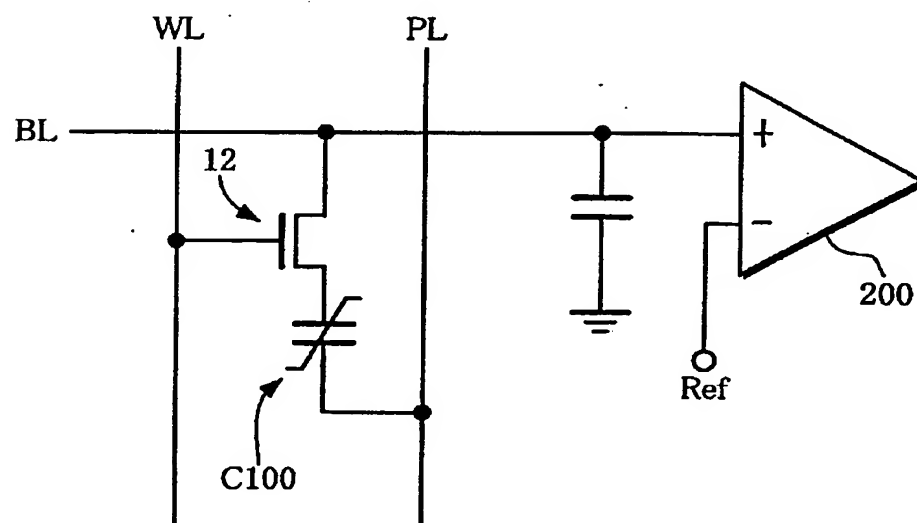


FIG. 14

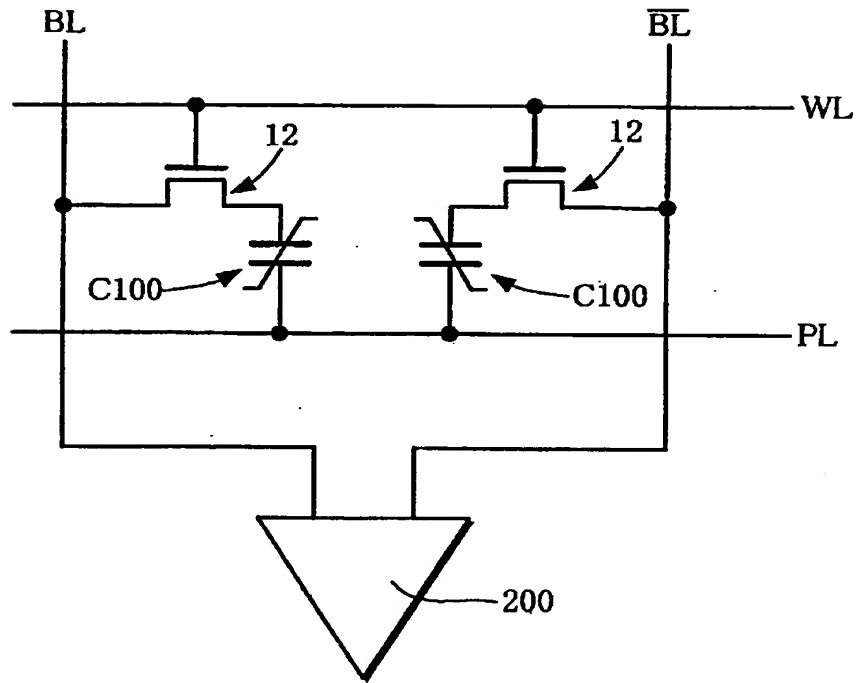


FIG. 15

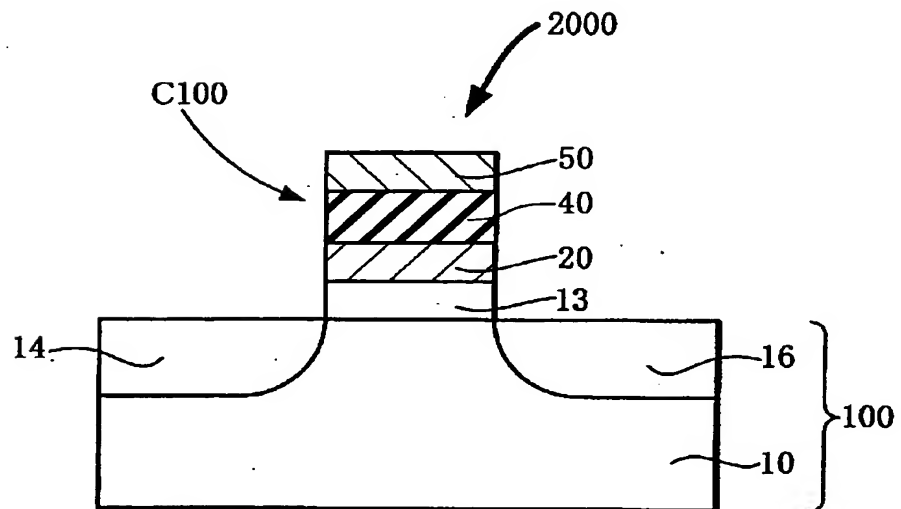


FIG. 16

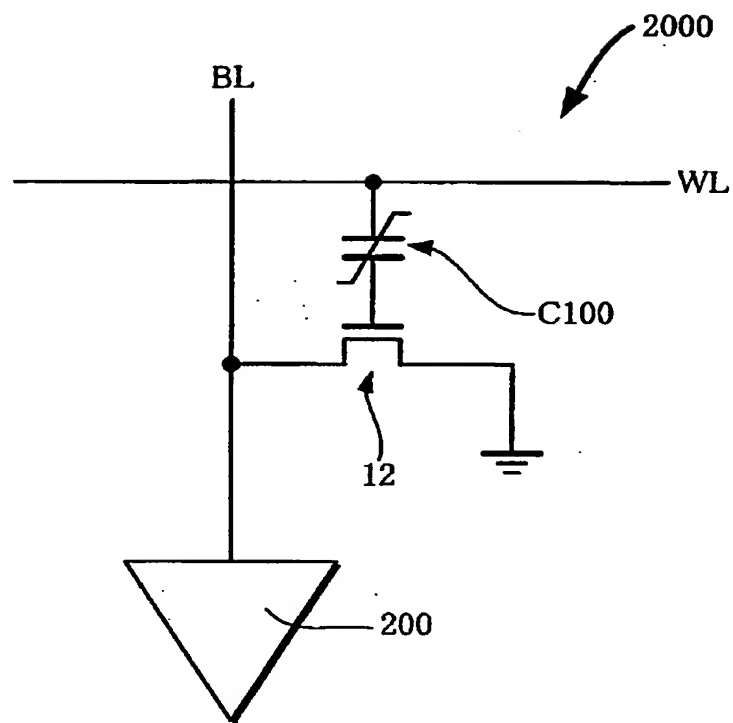


FIG. 17

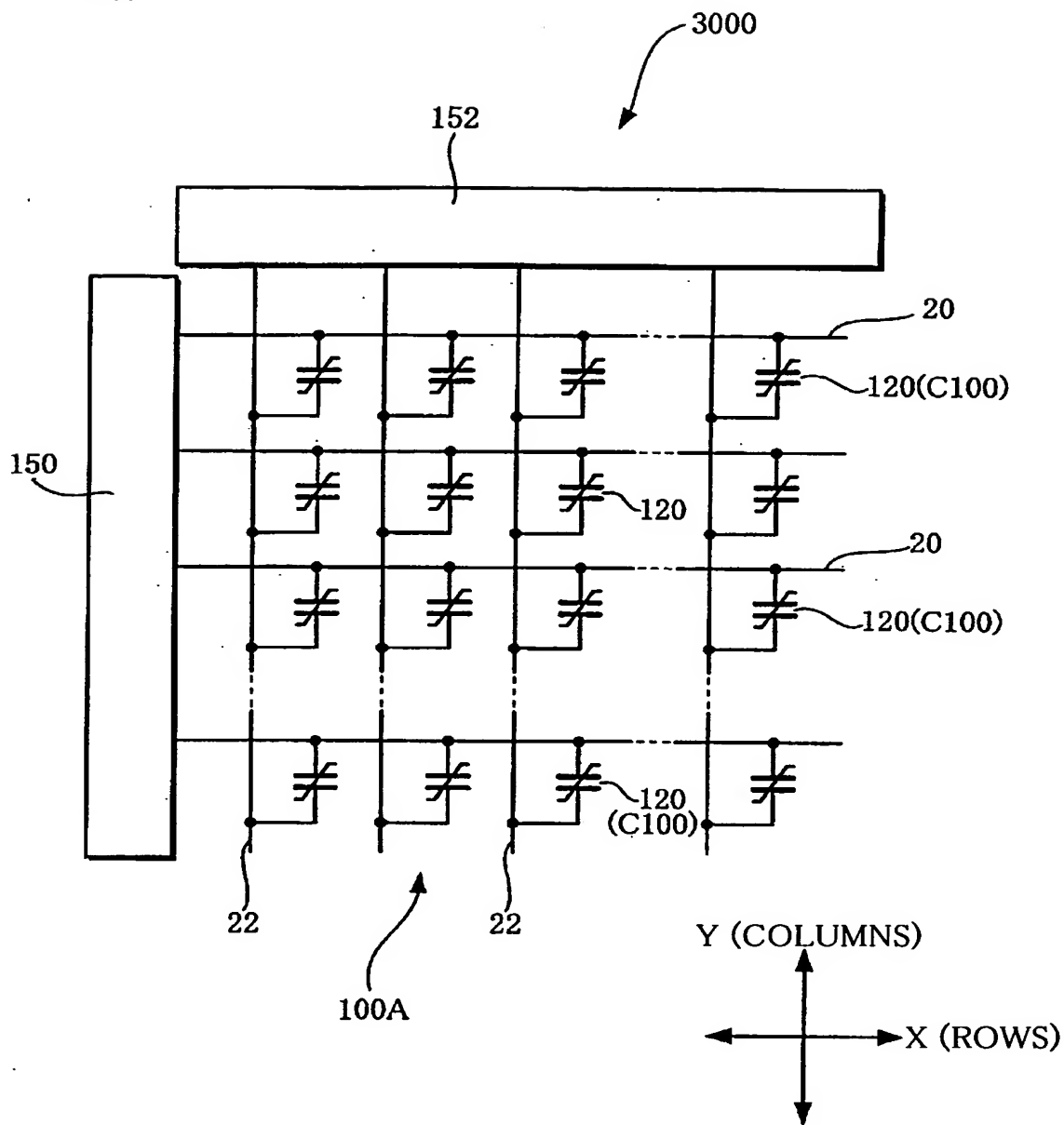


FIG. 18

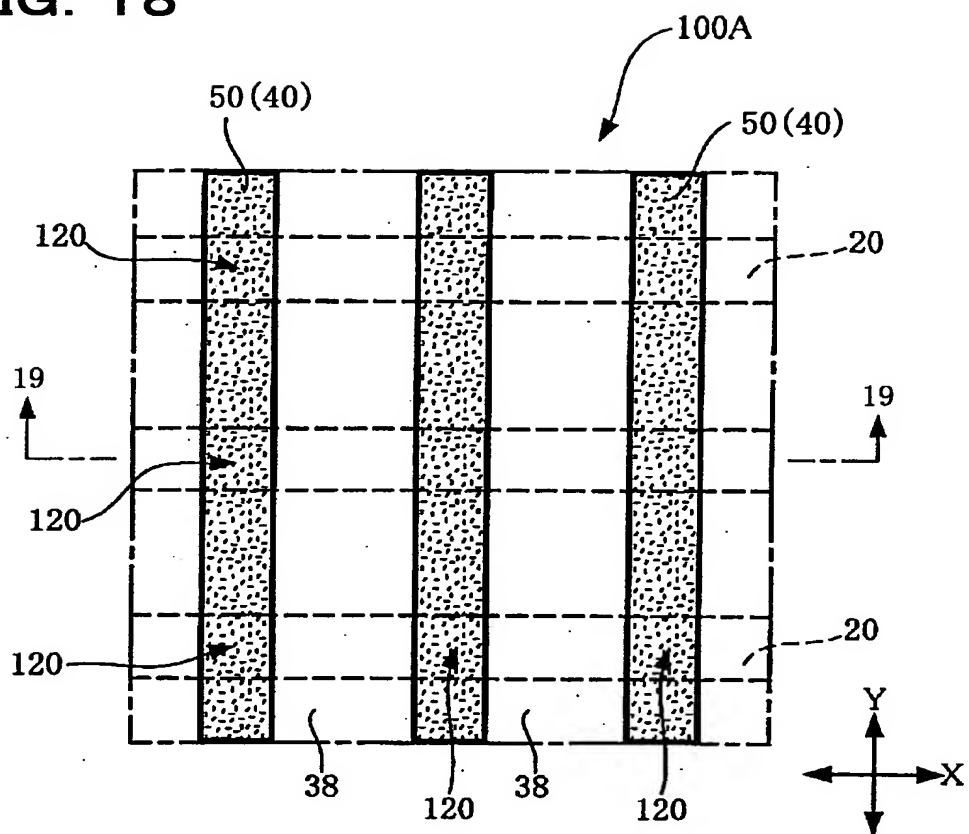


FIG. 19

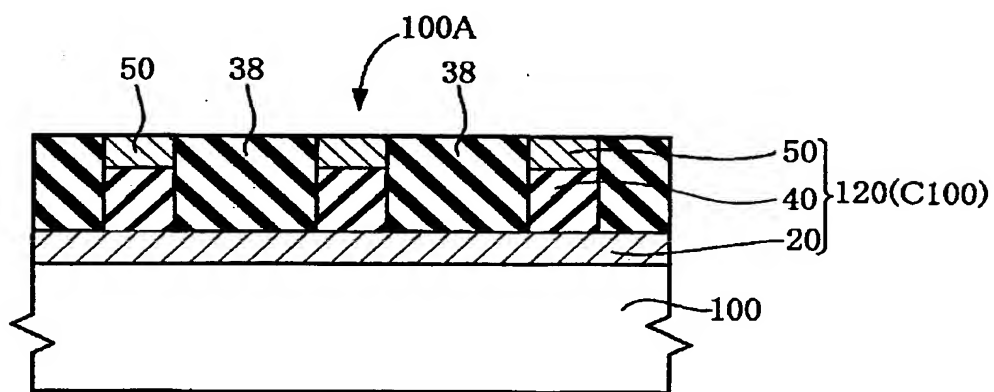
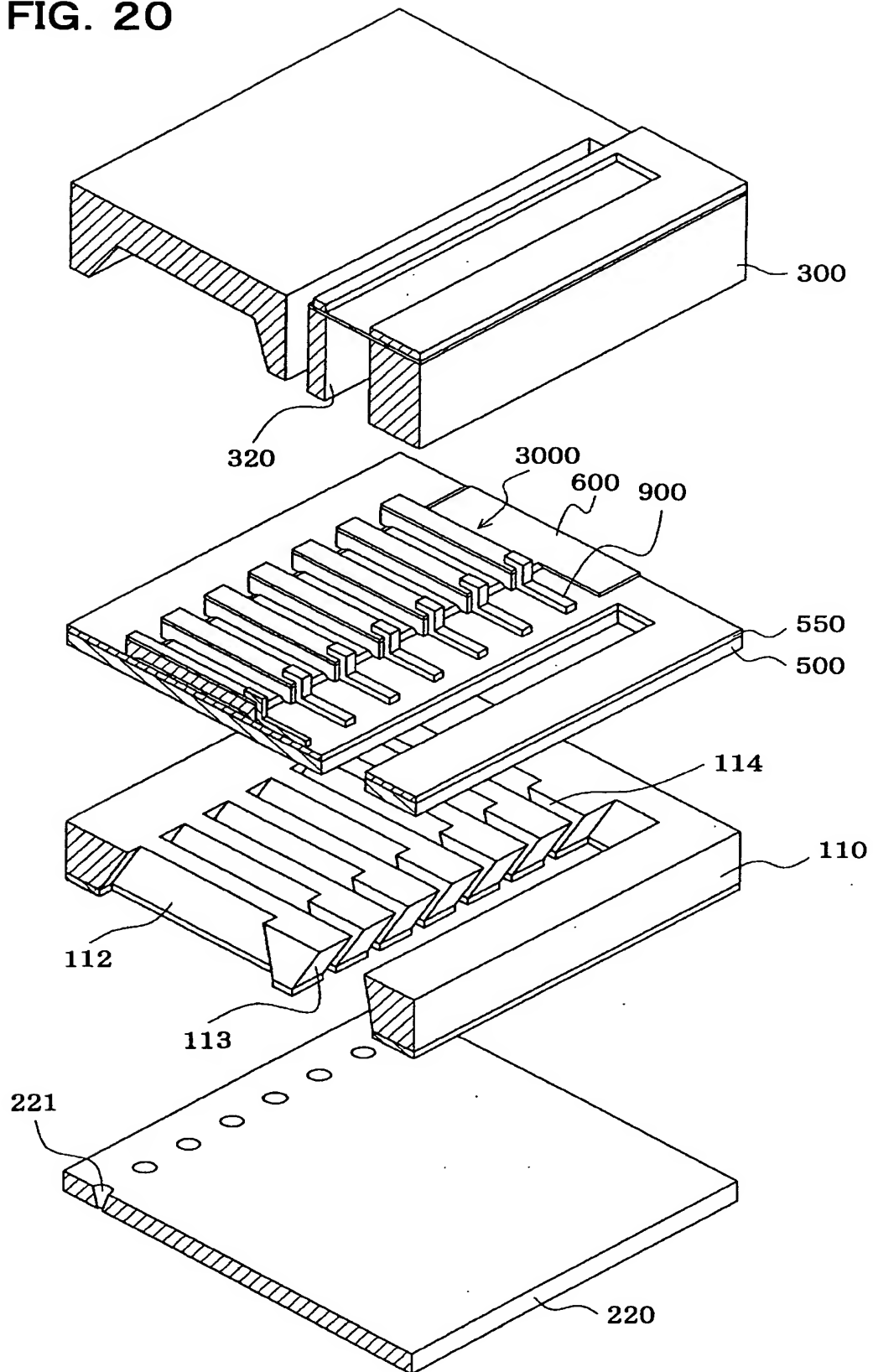
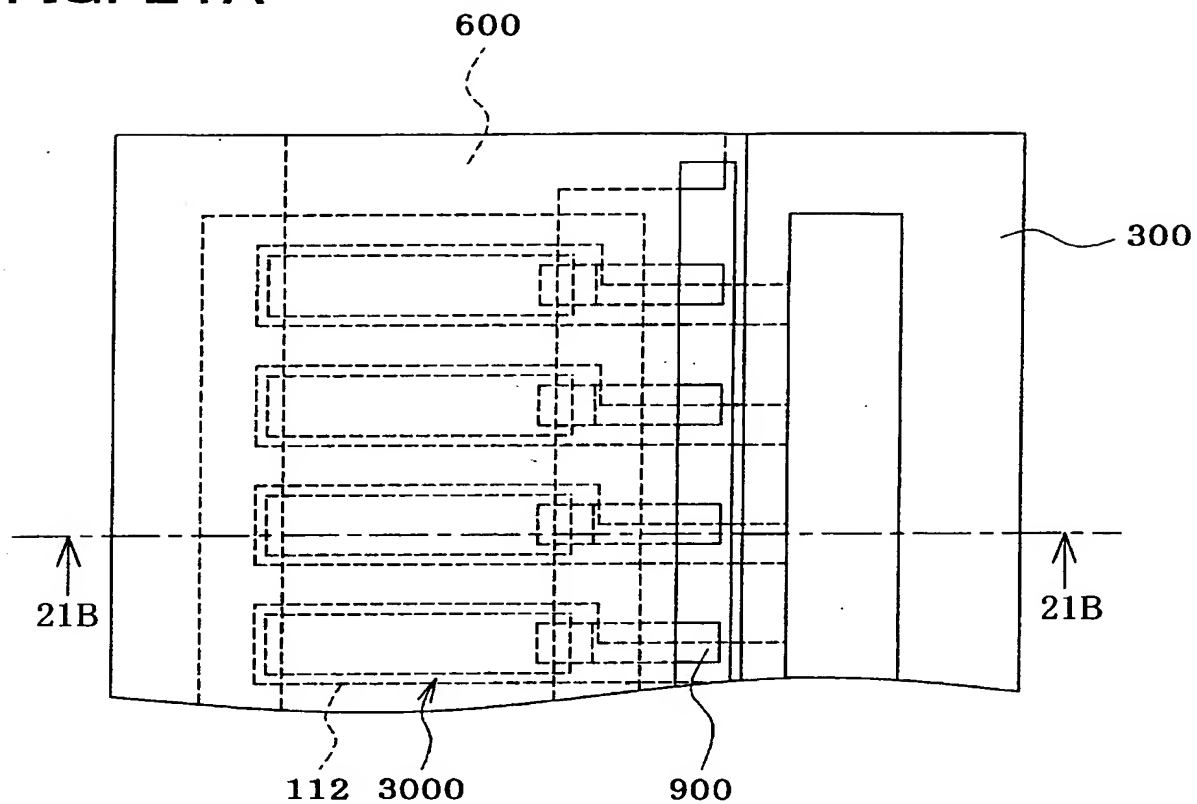


FIG. 20



**FIG. 21A**



**FIG. 21B**

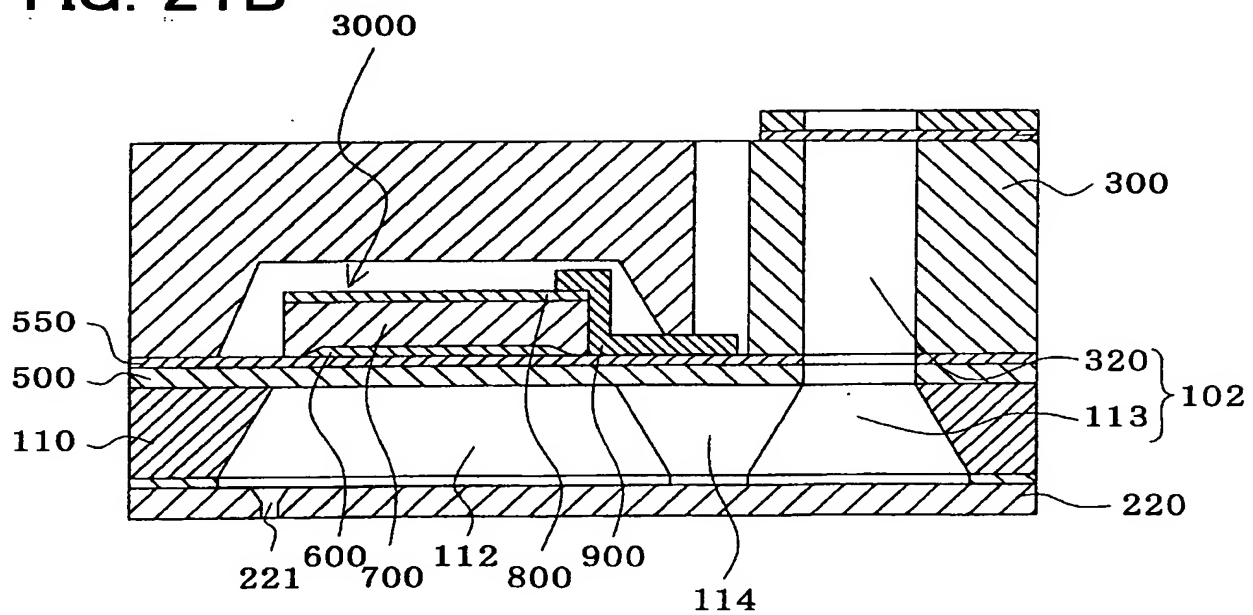


FIG. 22

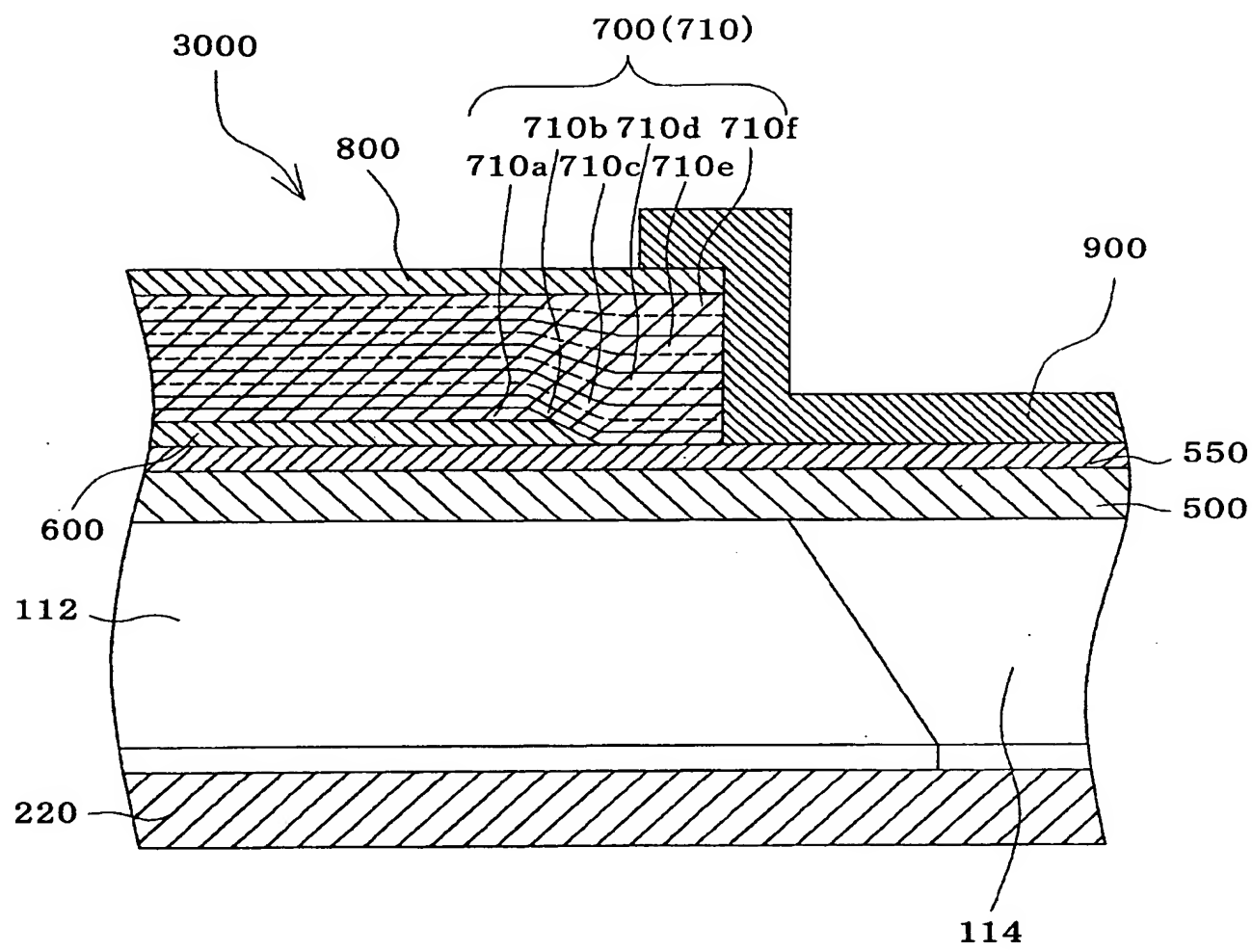
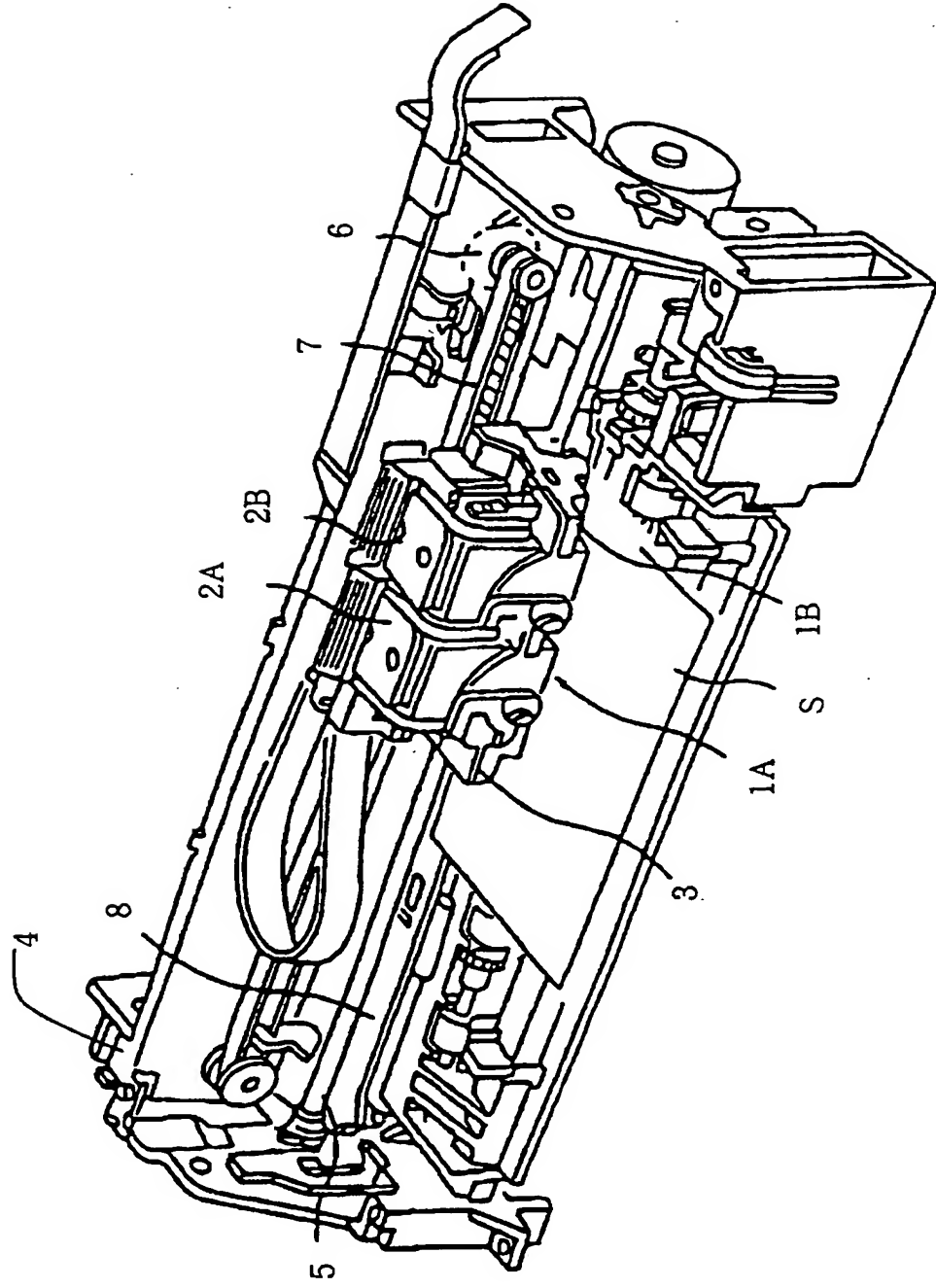


FIG. 23



**FIG. 24**

